



# TREE SOLUTIONS

Summer 2009

## Maintaining Tree Health Through The Drought



**A Properly Mulched Tree**  
Take care not to allow the woody material to build up onto the base of your trees and shrubs; as this creates ideal condition for pathogen colonization.

**Mulch wide not deep, at least to the edge of the dripline.**

**Thoughts of tree health may not be in the forefront of people's minds right now but perhaps more than ever it should be.**

It must not be forgotten that we are in the third year of drought on the Central Coast of California and the condition of already weakened trees and shrubs will worsen. Weakened trees are susceptible to a multitude of

life threatening problems including diseases and pests.

It has been written that the current drought may continue for several more years. Local municipalities are implementing severe restrictions of outdoor water use but there are things that can be done to help retain moisture levels which are so important for long term tree health. Below are some suggestions.

### Moisture Preserving Measures:

- Mulch
- Irrigation
- Proper pruning
- Mitigate soil compaction

### Mulch Benefits



Mulch has many benefits to life both above and below ground. Covering the soil

surface will help retain moisture by not allowing water to evaporate. Another benefit is that it moderates soil surface temperatures. This benefits the feeder root system and helps maintain the soil food web components which in turn help keep plants healthy. And lastly, proper mulching will encourage

nutrient cycling and disease suppression, thus reducing the need for chemical fertilizer and fungicide applications.

Mulch applications coupled with compost tea soil drenches is showing promising long term results for tree health. More on this later, as Tree Solutions is currently conducting local field studies on compost tea disease suppression efficacy and plans to publish results later this year.



**TREE SOLUTIONS**  
HEALTH CARE FOR TREES



# Irrigation

Irrigation systems must be properly installed to offer long term growth and health benefits.

Trees should be watered long enough to penetrate the soil to a depth of 12 to 18 inches. Check with a knowledgeable certified arborist if you're unsure as to how much water the trees in your landscape require.

Tree species, soil texture, and the time of year will determine the watering requirements. When you plant a tree or shrub, make sure you provide drip emitters that address the plant's current and future needs. That means that if you expect a tree's branches to grow 10 feet from the base of the trunk, install a drip system that will address future growth. As roots grow past the drip line, most plants will be able to get water from adjacent plants' drip emitters.

We see many newly planted trees with two emitters placed next to the trunks on opposing sides. In our opinion, this kind of set up is inadequate. Water seeping onto trunks promotes disease and decay. It also does not accommodate root growth or address the wicking of moisture from the planting hole by the dry adjacent soil.

Proper irrigation will encourage roots to grow out of the planting hole and into the surrounding soil. Roots do not solely grow next to a tree trunk. Limiting water application just to this area will not encourage root growth. Roots spread many feet outward from tree and shrub trunks, up to three times the distance between the trunk and the drip line.



Proper irrigation design allows water to penetrate the initial root zone and beyond.



**Nearly anyone can dig trenches, lay pipe and install spray emitters to apply water but proper installation is imperative for tree health and global conservation.**

## Improperly installed irrigation will:

- Waste water
- Not supply adequate moisture to the root zone
- Encourage foliar and root crown diseases
- Cost money



**Improper Irrigation**



There are many irrigation choices. Tree Solutions recommends drip irrigation system installation. We have successfully installed and recommend using subsurface or just below the mulch layer, inline drip emitter systems.

This system can be designed to accommodate any soil type. Locally, in the Santa Cruz/Santa Clara/Monterey Bay areas, we recommend Aqua Green Landscape Irrigation for irrigation consulting and installation. Owner, Chris Elliot teaches irrigation classes for the horticulture degree program at Cabrillo College and has decades of installation experience. The company web address is [www.aquagreentouch.com](http://www.aquagreentouch.com)

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Inappropriate Pruning

## Proper irrigation design will:



- Allow water to seep deeper into the root zone
- Encourage root growth
- Conserve water
- Will not disturb established root systems
- Reduce weed growth

## Tree Pruning

Excessive tree canopy pruning not only looks bad, it kills plant roots! Root loss equals tree loss. With very few exceptions, no more than 25% canopy reduction within a three year period should occur. As a rule, if properly performed, a tree should not look like it was just pruned.

Leaves take energy from the sun and convert it into carbohydrates through the process of photosynthesis. The carbohydrate reserves are stored in

trunks, branches, and roots for future use. There is a root to shoot ratio which is naturally produced and maintained by plants if the system is not disturbed. The first canopy reduction cut translates into root loss. Thus tree owners and their healthcare professionals must carefully evaluate how much canopy to remove. This caution about cutting also applies to the below-ground root system.



## Some causes of root loss are:

- Root removal during construction projects
- Soil compaction
- Excessive pruning
- Over watering-common in lawn areas
- Under watering-improper irrigation
- Disease
- Parasitic plant nematodes

## Soil Compaction

Although not a widely known fact, soil compaction is one of the leading causes of tree and shrub mortality. Soil is 50% pore space which among other things allows air and water exchange.

Soil compaction can create an almost desert like condition below ground in many cases as water cannot penetrate downward into the root zone. Microbes and other food web components either die or are substantially reduced. The presence and health status of these below ground components contribute tremendously to the above ground success of a plant.





Many people wait to call about their trees until they have an advanced problem; More than ever during these drought periods Tree Solutions recommends pro-active prevention of plant problems as a better and more cost effective approach than crisis management. By knowing local conditions, susceptibilities, common pest and disease problems we can often anticipate and head off an infection or infestation before it becomes an annoying or devastating issue. Preventive maintenance inspections/monitoring is the key to good plant health care. Feel free to call Tree Solutions for any of your Tree or Plant Health care needs.

**"An Ounce of Prevention, is Worth a Pound of Cure"**

**-Benjamin Franklin**

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## **Tree Solutions Services Include:**

- Disease and pest diagnosis
- Plant Health Care (PHC) programs
- Integrated Pest Management (IPM) programs
- Application of Least Toxic pesticides
- Mulch applications
- Natural fertility and bio amendments
- Pruning and planting
- Fruit tree care
- Construction impact assessments and mitigation
- Tree health and hazard assessment
- Arborist reports
- Tree Preservation programs
- Soil/Site analysis
- Tree inventories/management plans
- Tree Appraisals

